

Paragraph beginning at line 22 of page 2 has been amended as follows:

A3  
The present invention also provides a data encoder for generating spectrally-shaped coded data according to a trellis coding system, wherein the data is arranged in a series of data frames from a data source and a trellis state is associated with each data frame such that a coding scheme for each frame may be determined on the basis of transitions of states for frames over a selected look-ahead depth (D), comprising:

Paragraph beginning at line 12 of page 3 has been amended as follows:

A4  
wherein said metric computation and trellis extension engine determines the selected coding scheme for the current frame according to the state stored in the current state storage and a node for the frame succeeding the current frame by the look-ahead depth which is selected on the basis of the path metric for the node, including:

Paragraph beginning at line 19 of page 3 has been amended as follows:

A5  
In one embodiment of the present invention, the start-up phase and the steady state are unified. The trellis shaper chooses a predetermined valid trellis path during the start-up phase irrespective of the criterion for selection of the sub-tree. Once in the steady state, it uses the selection criterion to select the state transition.

Paragraph beginning at line 23 of page 3 has been amended as follows:

A6  
The trellis shaping function of this embodiment is implemented with a linear structure that requires memory for only the nodes at level D of the binary tree. In the steady state phase, for each input spectral shaper frame  $X_{i+D}$  the preferred embodiment computes the path metric associated with each of the  $M^{D+1}$  paths. The node at level D+1 which satisfies the selection criterion is then chosen as the best path. The state transition from the current root node and the subsequent root node is determined by the current trellis state and the best path.

Paragraph beginning at line 30 of page 3 has been amended as follows:

A7  
This implementation provides a significant reduction in computation and memory requirements, and the performance penalty as a result is insignificant.